

**E. Patrick Kelton  
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**Expert Report of E. Patrick Kelton**

The undersigned, Patrick Kelton attaches his resume. The undersigned has not previously testified as an expert witness. The undersigned is designated as a highway construction expert witness. The undersigned served as Project Manager for the WY-FLAP 6WX(1), FHWA-CFLHD Project and is personally knowledgeable about every aspect of the project related to the disputed Ishawooa Bridge.

For purposes of this report and the opinions of the undersigned, the following items were relied upon or were considered:

1. CM0001;
2. CM0002;
3. CM0004-CMOO6;
4. FHWA 0121;
5. FMWA 221;
6. Documents contained in the CM0001 file;
7. The correction and bracing plan submitted by MCC;
8. All correspondence and communications related to the subject bridge;
9. Change orders;
10. The Geotechnical Report;
11. FirstMark Subcontract;
12. The Plan Set;
13. The bid package;
14. FP 14; and
15. My years of experience and my observations during the project.

My opinions are based upon my many years of experience reviewing plans and specifications and managing many highway construction projects. My opinions in this case are as follows:

1. FirstMark was behind very early in the project. This caused delays and a need to hurry up.
2. FirstMark failed to follow the requirements set forth in the plans and specifications. FirstMark failed to properly brace the Phase 1 concrete pour as was required.
3. FirstMark mobilized equipment insufficient to meet the requirements for the job as it pertains to the pile driving.
4. The plans, specifications and Geotechnical Report are not misleading, and do not misrepresent the subsurface conditions.

5. The plans are clear and there was no need for change orders to address any alleged plan deficiencies or alleged defects.
6. FirstMark was given ample opportunity to cure its defective work.
7. FirstMark was terminated for good cause.

My opinions are based upon the following:

There is no proof that any provided specifications or information were defective. To the contrary, construction of the bridge by MCC since FirstMark's termination have proven the specifications and requirements were accurate and sufficient to complete the bridge per design. Mountain Construction built the bridge according to the plans and specifications without any modifications to those contract documents. The specifications and information were provided by FHWA, and that is what FirstMark's bid was based upon. Mountain did not provide or create the specifications and plans. FirstMark previously bid the job as a general contractor, so they had sought the specifications themselves, and relied upon the same to submit their bid as a potential general contractor. They immediately offered to bid the bridge construction work as a subcontractor after they were unsuccessful as a prime contractor bidder.

While FirstMark may have performed the work on the bridge with the intent for it to become permanent, they failed to follow the specifications in the FP14 as required by the prime contract and therefore the sub-contract. Specifically, see FP14 562.03 Temporary works. This lack of compliance in relation to the work performed which was necessary to meet the specifications was the ultimate cause of the failure, and the intended permanent design was not the cause of the failure. The process employed by FirstMark was defective, not the bridge design. The bridge has since been constructed using the very same, unmodified plans and specifications with success, and the bridge has since been in service today.

FP14 555.02 requires compliance with 562 Temporary Works which states in 562.03 Design: "Design temporary works that will support loads imposed and provide the necessary rigidity to produce the lines and grades shown in the plans for the final structure." (Partial). The Plan Sheets also required FirstMark to be responsible for the stability of all structures during every phase of construction. FirstMark did not submit any plans for temporary supports, nor did they make any attempt to install any temporary supports before pouring the concrete on the stage one deck. This unsupported pour caused the girders to rotate out of horizontal line and vertical grade. Further, when Mountain Construction subsequently recast the stage one deck on the same girders with simple and basic horizontal bracing, the deck was successfully poured without any girder rotation and misalignment occurring. This in and of itself proves that the FHWA design was sufficient to withstand the weight of the deck when the FP14 requirement for temporary bracing was followed as was required in the contract.

FirstMark did present three different corrective plan options to remedy the issues created by the concrete pour which resulted in unacceptable deflection in the girders. The options appeared to be pulled out of other unrelated bridge designs which had nothing to do with this project bridge, and likewise did not include necessary engineering to support those options. There was no context or support for the options presented by FirstMark. None of these items were unnecessary because there was no need to change the design.

On January 20, 2020, FirstMark and their sub-contractor showed up and replaced the splice plates that were in question and possibly damaged due to over-stressing. However, they did not perform this work as recommended and proposed. They simply attempted to support the girders and replaced the splice plates one at a time while the girders were still in the deformed and misaligned position, and this simply served to hold the girders in a misaligned and deformed position. The discussed plan was to loosen the plates, pull the girders into alignment with the plates allowed to slip, then replace and torque the new plates with the girders in alignment. Further, FHWA bridge engineers strongly recommended that the girders be removed and set on the ground so the plates could be reinstalled with proper alignment assured then reinstalling the girders. FirstMark declined to do this, and they cited extra costs of crane mobilization as the reason. After replacing the plates and determining the girders were still misaligned and unacceptable, FirstMark pushed strongly for FHWA to declare the girders damaged and pay for replacement, while FHWA suggested FirstMark submit a plan to attempt to pull the girders into alignment. A stalemate arose with FirstMark basically refusing to proceed until an agreement was reached for compensation for costs incurred. It was obvious that FirstMark had nothing on its mind but setting up for a disputed claim, instead of just completing the work. FHWA would not agree to any additional costs since the plans and specs had not been followed resulting in the misaligned girders, and they were not convinced that the girders could not be salvaged in place. In fact, FHWA field measurements showed the girders were not bent as FirstMark claimed, but were simply misaligned.

The contract did not require an independent "Geotechnical evaluation", however, the contract did require that an independent "Pile Driving Analysis" (PDA) be performed on 2 test piles and paid under A0800 55104-1000 DYNAMIC PILE LOAD TEST. That is, in fact, a very location specific geotechnical evaluation of sub-soils and their ability to provide load appropriate bearing structure via surface friction with a driven pile. This is a real time test, not theoretical, and the determination of the amount of pile to be driven is based upon these real time tests which were performed after the project began. Part of this requirement found in FP14 551.04(c)(8) (Subsurface conditions) require that the soil descriptions be provided with the analysis, and this would come from the geotechnical evaluation provided by FHWA. Hence that is the reason for providing the report in the bid documents. The Geotechnical Report does not determine the ultimate required pile depth. This is determined by the actual contemplated test piles and the PDA analysis real time while on the project. There is nothing in the contract documents which indicates that pile driving will be at a specific maximum depth.

FirstMark drove 556.50 feet of pile in phase 1. The minimum estimated amount per the Geotechnical Report was 240 LNFT for phase 1. Again, the Geotechnical Report does not control the ultimate required pile length, and it does not state that the 240 LNFT is a maximum depth. The actual testing in the field determines the pile length. Had FirstMark followed the contract requirements laid out in the FP14 and mobilized and committed appropriate equipment to handle and drive full length 60-foot pile, the increased lengths and depths would not have been any concern. In fact, the additional quantity would have been a welcomed and profitable economy of scale. The only issue would have been obtaining the additional pile which was readily available from True North Steel and other suppliers, and the only delay would have been truck time for the haul and delivery to the project. The required and appropriate driving equipment would have already been present onsite. Again, poor management decisions and planning on FirstMark's part led to this alleged cost overrun and schedule delays. This was not caused by MCC or FHWA or alleged contract deficiencies as stated by FirstMark. These alleged cost overruns and delays were a product of FirstMark's own making.

The actual general contract quantity of 556 LNFT was carried over into the subcontract. However, the subcontract also states that the subcontractor must comply with all the contract specifications and requirements as set forth in the Prime Contract with FHWA which includes the FP14 requiring the test piles and PDA analysis ultimately determining the final quantity of pile to be installed. The Geotechnical Report estimated quantity of pile is not dispositive, but only provided guidance for stated minimums and not maximums. This only serves to determine the minimum tip depth. This is to say that no matter if the required kips are achieved at a shorter depth, the pile must still be driven to the minimum required tip depth.

The subcontract also incorporated the FP14 as noted on plan sheet S2 of the bridge plans, General notes: Specifications: Line 3-Federal Highway Projects, FP-14, Dual Units. FirstMark did not follow the requirements very clearly laid out in the FP14 which led to their apparent misunderstanding of the required pile driving equipment and possible pile lengths. (IE: Pile lengths are determined by the PDA and not the Geotechnical Report, and the plans very clearly state minimum pile length, not maximum). FirstMark did not perform due diligence in analyzing the requirements of the FP-14 before construction, and highly likely before bidding on this project, which may be considered incompetence on its part. Any conditions which FirstMark states it did not know regarding pile depths were really informing any bidder for the project that such conditions were unknown and possible greater depths and lengths of pile were to be expected. The Geotechnical Report and the and the FHWA bid package also advised the contractor of that fact as well.

Plan sheet S3 shows a minimum pile tip elevation, and this is determined by the cutoff elevation of the pile minus 40.00 feet as determined to be the minimum length to achieve the required axial load using the Geotechnical Report. This is provided to state that no matter if the required kips are achieved at a shorter pile length, the pile must still be driven to the minimum tip depth. This information is found in the FOUNDATION TABLE

on sheet S3. More importantly, the foundation table gives the NOMINAL PILE DRIVING RESISTANCE REQUIRED, which is 435 kips for abutment 1 and 415 kips for abutment 2. The actual kips achieved are to be determined by the pile driving analysis done during the driving of the 2 test piles which determines the blow count per foot required of a specific hammer to achieve the required kips. (Wave equation). The test pile is mandated under pay item 55104-1000 Dynamic pile load test, qty-2 EACH. Method described in FP14 551.07. Also, 551.05 Pile Driving Equipment--provides the equipment to be provided, and FirstMark did not provide necessary equipment which was expected to meet these requirements. 551.04 Submittal states that the equipment to be used must be submitted for approval at least 30 days before use and approved, and FirstMark did not follow this requirement. The equipment was submitted for approval after mobilization. The end result is they incurred cost mobilizing equipment that was not capable of driving the required pile lengths which were in excess of the ASSUMED 40-foot pile length. FP14 551.10(b) states to provide full length piles for lengths up to and exceeding 60 feet. The test piles proved lengths required were greater than 60 feet. The equipment FirstMark mobilized without prior approval was not capable of handling 60-foot pile lengths. Therefore, when the first test pile proved greater lengths were required, and FirstMark requested additional compensation, FHWA would not entertain paying the submitted cost. Also, FirstMark assumed they could install the pile using a vibratory hammer without requesting approval. FP14 551.05(5) states that vibratory hammers may only be used when specified, (but it was not specified), and then only AFTER completing a test pile using a dynamic hammer. Even if properly requested and approved, the dynamic hammer, crane, and leads would have to have been mobilized to do the test pile. No cost savings is possible if following the FP14 would have been achieved under the circumstances.

Shane Nelson was informed orally that the FHWA increased the pile length to the 580 LNFT at the stated contract unit price. His expressed concern was primarily based on the price per foot issue rather than quantity. Discussions led to Pat Kelton's suggestion that FMC submit a request for equitable adjustment in order to recover their alleged cost overrun. This was submitted, however, it was not submitted by FirstMark in an approved (FHWA) format, so when forwarded to FHWA it was not accepted. Later, Phil Martin with FirstMark asked Pat Kelton via email about CM001, and Mr. Kelton responded that yes, it increased the quantity but did not change the unit price. CM001 was explained by FHWA to be an internal document serving to put funds in place for the proposed increases in quantity contingencies and that individual CMs would follow. These would be formally submitted to any sub-contractors, and relevant contracts would be appropriately modified if the proper correct process was followed for submitting the request for approval for modification of the contract price. FirstMark failed to follow that requirement.

Any costs incurred by FirstMark to drive the additional depths were caused by poor choices and decisions made by FirstMark management. If FirstMark had mobilized the required equipment initially, there would not have been additional costs. Further, there were never any agreements in place indicating that Mountain Construction would pay any additional pile driving costs incurred by FirstMark. The FHWA never paid any extra money

to MCC for additional costs for pile driving. Rather, the FHWA paid for the additional quantity at the contract unit price. If FirstMark had mobilized the correct equipment and made pile purchasing choices wisely and in compliance with the FP14, they would have welcomed the additional quantity since they could have capitalized on the increased quantity under the economy of scale. Many costs allegedly incurred by FirstMark were not warranted on account of the poor choices they unilaterally made themselves.

FirstMark does not deserve to be compensated for alleged costs that were caused and incurred from its own mistakes, procrastination, and incompetence. Had FirstMark performed the job in a competent manner, there would have been no disputed costs caused by their own conduct. The alleged costs were incurred on account of correcting unacceptable work caused from failure to comply with the contract requirements as set forth in the FP14 for support of temporary or partially complete structures.

Changing the project schedule was never in MCC's power. The contract schedule could only be changed by FHWA and then only with a request and submittal of verifiable delays caused by unforeseen issues. The delays were not caused by unforeseen issues. This information was relayed to FirstMark and they never provided any legitimate verifiable reasons to substantiate a contract extension. They claimed the extra pile was apparently somehow a sufficient verifiable reason according to FirstMark. However, had they followed the FP14 there would have been very little, if any, delay to the schedule. There were sufficient contract days necessary to build the bridge, but FirstMark consistently squandered days devoting that time to minor issues that were mishandled and in turn created long delays. There were many times FirstMark did not even have a presence on the job, or management only without appropriate manpower, with no work performed.

It is completely incorrect to state that FirstMark was wrongfully terminated from the contract. FirstMark was given ample warning and opportunity to competently correct the defects in construction which were of their making. MCC worked in good faith with FirstMark until the very end to assure that FirstMark had opportunities to remain on the job. FirstMark representatives should have known early on that the bridge construction was on a critical path. After the issues revolving around the pile driving, and the fact that the bridge construction did not get completed by November 30 as required by the contract, FirstMark became obstructionist and appeared to merely being going through the motions of attempting to prosecute the project. FirstMark failed to take any responsibility for its actions and inactions and only focused on what it alleged were defects in the plans. Importantly, Mountain Construction was assured by the FHWA of receiving a letter of non-compliance from FHWA for failure to maintain the schedule and lack of performance related to the issue of building the bridge, which was FirstMark's contracted work. Both the County officials and FHWA representatives repeatedly expressed lack of confidence in FMC and likewise expressed frustration at the very slow pace the bridge work was being performed by FMC. Not only was the FHWA administration demonstrating lack of confidence in FirstMark in and after January, 2020, the County was likewise expressing serious reservations and concerns. FirstMark's delays and failures were creating a



bottleneck in prosecution of the project, and the motoring public and local landowners were suffering from the delay.

FirstMark proved they were not willing to put forth the effort to overcome the issues by way of squandering the time between the meeting in December 2019, until mid-January 2020. They promised to come up with a plan of action to correct the girder issue, when in fact they came back wanting to know how it was being paid for and insisting on direction from FHWA and MCC as to how to proceed. This occurred after FHWA and MCC made it clear we would not be directing their work. Again, in every step with the girder alignment issue FirstMark was argumentative and reluctant to take the lead in correcting the issue and moving forward. Instead of trying to work to resolve the issues they created in the bridge work, FirstMark appeared to be setting up their defense of a claim. FirstMark constantly insisted they be given direction in how to proceed instead of initiating performance like a competent contractor. FirstMark should have moved forward with the work, and later filed a claim, instead of focusing upon how to set up their claim. A letter of non-compliance would do much financial harm to Mountain Construction Company, and this had to be prevented. FirstMark had been warned by Mountain Construction's attorney that it needed to get its act together. Instead, FirstMark focused its efforts on setting up a claim defense. Finally, Park County and the FHWA had enough and delivered letters to MCC indicating that they lacked confidence in FirstMark. After the letter was received from the FHWA expressing these concerns, MCC had no choice but to terminate FirstMark, and did so with good cause.

It was clear that once the FirstMark discovered that it had mobilized insufficient equipment to perform the pile driving, FirstMark appeared to lack ambition and any initiative to complete the project. FirstMark representatives made it very clear that they would do nothing on the project after that unless they were specifically directed to perform a specific task. FirstMark failed to complete the bridge by November 30. FirstMark failed to make any meaningful effort to correct the defective work associated with the deflected girders. What FirstMark representatives began to signal after the defective concrete pour, was that they were devoting all of their time and energy to support a claim or defense of a claim, instead of just completing the project.

*E. Patrick Kelton*

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